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SEPSIS BULLETIN
21 December 2017

Adult Sepsis

Prehospital antibiotics in the ambulance for sepsis: a multicentre, open label, randomised trial
Alam N. et al.
The Lancet Respiratory Medicine; 2017
Patients with sepsis could benefit from timely prehospital care. EMS personnel training improved early recognition and care in the whole acute care chain. However, giving antibiotics in the ambulance did not lead to improved survival, regardless of illness severity.

qSOFA score: Predictive validity in Enterobacteriaceae bloodstream infections.
Burnham, Jason P. et al.
Journal of Critical Care , Volume 43 , 143 – 147
Results support qSOFA score, AMS, and sepsis severity as acceptable bedside tools for prognostication during initial clinical assessment in patients with sepsis. qSOFA retained its predictive validity in this cohort, suggesting that appropriate initial antimicrobial therapy is not an effect modifier for mortality when using qSOFA for prognostication.

Endocrine and Metabolic Alterations in Sepsis and Implications for Treatment.
Ingels C; Gunst J; Van den Berghe G
Critical care clinics; Jan 2018; vol. 34 (no. 1); p. 81-96
Sepsis induces profound neuroendocrine and metabolic alterations. During the acute phase, the neuroendocrine changes are directed toward restoration of homeostasis, and also limit unnecessary energy consumption in the setting of restricted nutrient availability. Such changes are probably adaptive. In patients not recovering quickly, a prolonged critically ill phase may ensue, with different neuroendocrine changes, which may represent a

Neonatal Sepsis

Efficacy of zinc supplementation for neonatal sepsis: a systematic review and meta-analysis
Tang, Zhijun et al
The Journal of Maternal-Fetal & Neonatal Medicine.
Published online: 12 Dec 2017
Zinc supplementation may significantly reduce mortality rate and improve serum zinc in neonatal sepsis, but has no substantial influence on hospital stay and the number of expired patients.

Adaptation of a Biomarker-Based Sepsis Mortality Risk Stratification Tool for Pediatric Acute Respiratory Distress Syndrome.
Yehya, Nadir; Wong, Hector R.

Critical Care Medicine: January 2018 - Volume 46 - Issue 1 - p e9–e16
A validated, biomarker-based risk stratification tool designed for pediatric sepsis was adapted for use in pediatric acute respiratory distress syndrome. The newly derived Pediatric Acute Respiratory Distress Syndrome Biomarker Risk Model demonstrates good test characteristics internally and requires external validation in a larger cohort. Tools such as Pediatric Acute Respiratory Distress Syndrome Biomarker Risk Model have the potential to provide improved risk stratification and prognostic enrichment for future trials in pediatric acute respiratory distress syndrome.

Procalcitonin-guided decision making for duration of antibiotic therapy in neonates with suspected early-onset sepsis: a multicentre, randomised controlled trial (NeoPIns)
Stocker, M. et al.
The Lancet , Volume 390 , Issue 10097 , 871 – 881

maladaptive response. Whether stress hyperglycemia should be aggressively treated or tolerated remains a matter of debate. Until new evidence from randomized controlled trials becomes available, preventing severe hyperglycemia is recommended. Evidence supports withholding parenteral nutrition in the acute phase of sepsis.

Improving Long-Term Outcomes After Sepsis
Prescott HC; Costa DK
Critical care clinics; Jan 2018; vol. 34 (no. 1); p. 175-188
To improve long-term outcomes, in-hospital care should focus on early, effective treatment of sepsis; minimization of delirium, distress, and immobility; and preparing patients for hospital discharge. In the posthospital setting, medical care should focus on addressing new disability and preventing medical deterioration, providing a sustained period out of the hospital to allow for recovery.

Antipyretic Therapy in Critically Ill Septic Patients: A Systematic Review and Meta-Analysis
Drewry AM, et al.
Critical care medicine. 2017;45(5):806-813.
Aimed to examine the impact of antipyretic therapy on mortality in critically ill septic adults. Antipyretic treatment does not significantly improve 28-day/hospital mortality in adult patients with sepsis.

The characteristics and impact of source of infection on sepsis-related ICU outcomes
Jeganathan, Niranjan et al.
Journal of Critical Care , Volume 41 , 170 – 176
Source of infection is an independent predictor of sepsis-related mortality. To date, studies have failed to evaluate differences in septic patients based on the source of infection. The observed hospital mortality was highest for sepsis due to multiple sources and unknown cause, and was lowest when due to abdominal, genitourinary (GU) or skin/soft tissue. Patients with sepsis due to lungs, unknown and multiple sources had the highest rates of multi-organ failure, whereas those with sepsis due to GU and skin/soft tissue had the lowest rates. Those with multisource sepsis had a significantly higher median ICU length of stay and hospital cost.

Sepsis mortality score for the prediction of mortality in septic patients.
Shukeri, Wan Fadzlina Wan Muhd et al.
Journal of Critical Care , Volume 43 , 163 - 168
A sepsis mortality score using baseline leukocytes count, PCT, IL-6 and ARE was derived, which predicted

Procalcitonin-guided decision making was superior to standard care in reducing antibiotic therapy in neonates with suspected early-onset sepsis. Non-inferiority for re-infection or death could not be shown due to the low occurrence of re-infections and absence of study-related death.

Point-of-care lactate testing for sepsis at presentation to health care: a systematic review of patient outcomes.
Morris, E. et al.
Br J Gen Pract. 2017 Dec;67(665):e859-e870.
Investigates the effect of using point-of-care lactate at presentation to health care on mortality and other clinical outcomes, in patients presenting with acute infections

Early-onset sepsis risk calculator reduces empiric antibiotic use.
Klingenberg, Claus
The Journal of Pediatrics , Volume 192 , 266 – 269
Antibiotic overuse early in life may have severe short-term and long-term adverse consequences.1, 2 This large cohort study from KPNC investigated clinical management of term and near-term infants with suspected or proven EOS over a 6-year period. The remarkable 50% relative reduction in antibiotic use after introduction of an EOS-calculator was not followed by a delay in therapy for infected infants or an increase in readmissions.

A Systemic Inflammation Mortality Risk Assessment Contingency Table for Severe Sepsis.
Carcillo JA et al.
Pediatr Crit Care Med. 2017 Feb;18(2):143-150
A C-reactive protein- and ferritin-based contingency table effectively assessed mortality risk. Reduction in systemic inflammation below a combined threshold C-reactive protein of 4.08mg/dL and ferritin of 1,980ng/mL appeared to be a desired response in children with severe sepsis.

30-day mortality with very good performance and added significant prognostic information to SOFA score.	

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